ARMY INFORMATION DIGEST

APRIL 1956

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OFFICIAL U. S. ARMY MONTHLY MAGAZINE

ARMY INFORMATION DIGEST

OFFICIAL MONTHLY MAGAZINE of the DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern.

THE DIGEST is published under the supervision of the Army Chief of Information and Education.

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Publication approved by Director, Bureau of the Budget, 20 May 1954.

Manuscripts on subjects of general interest to Army personnel are invited. Direct communication is authorized to: The Editor, ARMY INFORMATION DIGEST, Cameron Station, Alexandria, Va.

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IN THE DECADE since a radioactive burst over Hiroshima heralded the dawn of the atomic age, awe of the unknown has given way to healthy respect and awareness of this new force as a powerful ally in ground combat operations. In the front cover scene, military observers at Yucca Flats, Nev., study a nuclear blast at close range during Exercise Desert Rock VI.

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ARMY INFORMATION DIGEST

APRIL 1956

Volume 11

Number 4

In This Issue:

Army Pictorial Service Division *by Col. W. W. Lindsay* 2

How pictures have served the Army as training and information aids, from Civil War days to the present. *(Part I of two articles).*

Army Pictorial Center *by Col. Bertram Kalisch* 10

Combat instruction and technical information are the stock in trade of this unique Army activity.

Fighting Behind Enemy Lines *by Col. Edson D. Raff* 12

Trained to conduct guerrilla warfare in support of Army operations, Special Forces are ready to fight any time, any place, anywhere.

Housing in Germany *by Col. Marvin C. Ellison* 20

New housing developments benefit Army families and ultimately the German economy.

Army News Service *by Capt. Philip A. Farris* 22

A new information service helps soldier newspapers answer that persistent question—Why?

Assault River Crossing—Combat Engineer Style *(Pictorial)* . . . 24

A speeded-up demonstration enables The Engineer School to teach tactical principles effectively.

Medical Fire Fighters *by Grace W. Vincent* 28

Army researchers develop life-saving procedures for treatment of mass burn casualties.

Answering the Soldier's Needs *by George J. Schneider* 35

Reports by trouble-shooting Quartermaster Field Observers help minimize equipment failure in the field.

Landing Craft Retriever to the Rescue 40

Boiling surf holds no terrors for this Transportation Corps colossus as it hauls stranded landing craft to safety.

In Brief

Army Anniversaries 19

Waves Made to Order 49

What's New in Training 42

Paragraphs from the Pentagon and the Field 44

Behind the scenes at th

ARMY

Part I

The Camera in Army Service

TWICE WITHIN a single decade, in World War II and again following the Korean outbreak, the Army was required to expand from a small peacetime defense organization into one of the largest and most powerful war machines in existence. Inevitably, the training problem involved in converting citizens with little military experience or background into competent, confident and successful soldiers presented an almost impossible challenge.

The fact that this formidable training problem *was* solved is, of course, history. That Army Signal Corps training films contributed substantially to this success is borne out by the millions of man-hours of precious, war-scarce time that commanders devoted to their use. These celluloid capsules of concentrated instruction brought the many details of garrison life and actual combat into focus speedily, cheaply,

COLONEL W. W. LINDSAY, Signal Corps, is Chief, Army Pictorial Service Division, Office of the Chief Signal Officer.

PICTORIAL SERVICE DIVISION

Colonel W. W. Lindsay

and with a uniform standard of excellence.

To the accompaniment of whirring projectors in darkened classrooms, theaters, dayrooms, mess halls and tents, soldiers were instructed in the elements of first aid, field sanitation, battlefield survival. In giant-size close-ups accompanied by carefully planned commentaries explaining each step, they learned the intricate functioning of the M1 rifle, of the machine gun and heavy weapons.

They learned, too, how to deploy their unit for the attack, how to detect booby traps and advance through minefields, how to utilize cover and concealment, to bridge streams and rivers, to disable enemy tanks. Many a soldier in the thick of battle was able to take proper action because "It was just like they showed us in the movies."

Still other films dramatized—more effectively than lecture, book or pamphlet—such concepts as Why We Fight, the history and traditions of the service, the responsibilities of citizenship, and the blessings of the American way of life. In short, these films successfully projected the many inspirational and motivating ideas which galvanize free men to action, but which are extremely difficult to convey.

Today, in a world in which time and space have been telescoped by supersonic bombers, long-range missiles, and where destructive forces have been multiplied manyfold by the advent of atomic weapons, the time available for training must be utilized more carefully and intensively than ever before. In addition, advances in the technology of warfare require our soldiers to absorb ever more technical knowledge about complex machines and weapons—and this in a shorter period of time than ever before.

For these and other reasons, the training film—and its lively companion, television—are destined to play increasingly important roles in the instructional systems currently evolving for our atomic-age Army.

PRIMARY responsibility in these and in related areas rests with the Army Pictorial Service Division (APSD) of the Office of the Chief Signal Officer. Military pictorial

activities are conducted to accomplish these six main objectives—

- Support tactical and technical troop training and operations.
- Support technical studies and analyses in connection with research and development.
- Provide pictorial aids to assist high commanders in the preparation of tactical training programs and strategic planning.
- Disseminate news and information.
- Document Army operations and contribute to the historical record.
- Promote troop morale.

To accomplish these missions, the Army utilizes a variety of pictorial media, ranging from motion pictures and television presentations to still pictures, slides and film strips. In Army studios, the Signal Corps produces films for troop training, troop information, and morale and orientation purposes. It uses animation and color to illustrate such processes as cell growth and nuclear fission for the instruction of technical specialists. In support of our international military agreements, it adapts existing training films to foreign languages by dubbing in dialogue and commentary in order to train allied troops in the use of American weapons, and the methods of United States tactics.

In furtherance of morale and orientation objectives, films are produced which acquaint troops with our Allies and which explain wartime objectives. To aid the soldier in his individual adjustment, it prepares educational films introducing the young citizen to Army life. Still other productions reorient troops prior to discharge or assist in mental, physical and vocational rehabilitation.

As a link which contributes to public understanding of the Army, *The Big Picture* is produced. This prize-winning television series, which rates among the most popular TV subjects in the Nation today, reaches millions of viewers over more than 300 stations weekly and enjoys the largest TV showing of any program on the air.

Within the Army itself, APSD directs the maintenance of the world's largest still and motion picture records centers to which it is constantly adding new items in order to document wartime operations, to preserve military information, to serve as a pictorial record for identification and legal purposes, and to furnish visual material for troop training. To reach and serve Army units in all parts of the globe, APSD supervises a far-flung film distribution system.

VAST AND VARIED as Army pictorial operations are today, their growth and development—like that of the Signal Corps itself—can be measured by the span of modern-day technology. Photography had its first large-scale military application in the Civil War. But even before that, the Army was using photography, some performed by civilian photographers, some by the Corps of Engineers on their western explorations.

No provisions were made for military pictorial coverage of the Civil War, but on both sides enterprising commercial photographers came forth and were accorded much the same status as combat

Carrying their cumbersome equipment on wagons, Brady's photographers covered the Civil War on many fronts.

correspondents. Of these, the best known was Mathew B. Brady, whose collection of battlefield and war scenes is now invaluable. A successful photographer of social, financial and political figures in New York and Washington, Brady left his thriving business to photograph the war.

The equipment of those days was cumbersome. Roll film had not yet been invented; in fact, the photographic process had been discovered only a few years before. To take to the field with the brittle "wet plates" then in use, the variety of chemicals needed, and the other required paraphernalia was itself a task in logistics. Yet Brady did it, furnishing several teams of photographers with equipment and wagons, taking to the field himself, and bearing all the expense personally.

These early photographers lived with the troops in the field, were subjected to shelling, and braved rifle fire in order to get close enough to take their pictures. Because of characteristics of their equipment, it was impossible for them to obtain action shots, but some of their photographs are remarkable for clarity and composition under poor conditions.

While the Army did not provide official pictorial coverage of the many western frontier activities following the Civil War, many photographs—and some remarkable drawings as well—were produced by individuals on their own initiative and are now invaluable.

In 1881 Sergeant George W. Rice, often credited as being the first Signal Corps photographer, accompanied and photographed the famous Greely expedition to Northern Greenland. He never returned, having given his own life in an attempt to obtain food for the others after the party had become stranded. However, Lieutenant Adolphus W. Greely, leader of the expedition, managed to save many of the photographic plates and when he and five others finally were found in an epic Arctic rescue, he brought back the plates.

Greely later became Chief Signal Officer (1887–1906), and Army photography flourished under his administration. In 1894 the Signal Corps was given responsibility for the War Department photographic

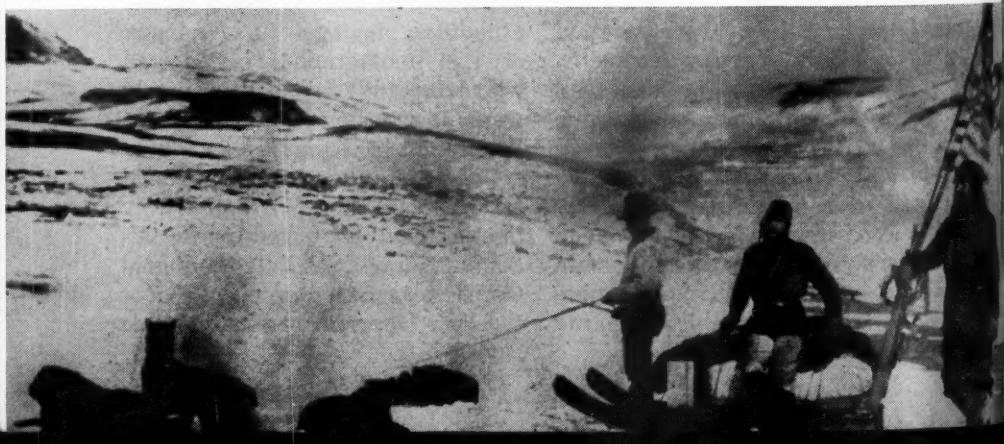
Ready to snap the shutter, this is how a Signal Corps photographer appeared about 1900.

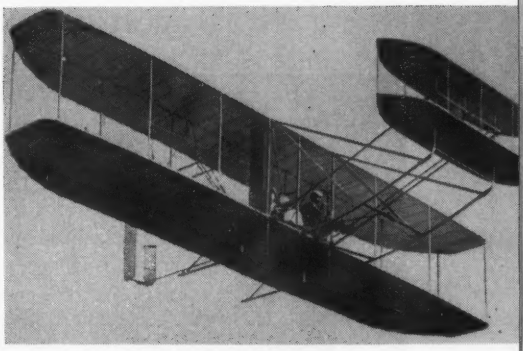
library, and thereby acquired the valuable Brady collection and all other military photographs. At about that same time, Greely established a course in photography at the Signal Corps school at Fort Whipple, now Fort Myer. The instructor, Lieutenant Samuel Reber, wrote the Army's first handbook, *Manual of Photography,* which was published in 1896.

BY THE time of the Spanish-American War, field photography had become more practical because of the introduction of roll film. The Signal Corps had budgeted for photographic services, and trained Signal Corps cameramen covered the war. All together, several thousand negatives of troop firing, gun positions and battle scenes were obtained.

By this time Army photography had become well established as a Signal Corps mission, though some topographical photography was still being conducted by the Corps of Engineers. A laboratory was

Cameras accompanied the Greely expedition to the Far North. Here several members of that expedition are shown in an 1882 photograph.





Army motion picture cameras recorded this test flight by Orville Wright at Fort Myer, Va., in 1909.

maintained in the Office of the Chief Signal Officer in Washington, and another at Fort Myer nearby. Signal Corps photographers took pictures of maneuvers, equipment, official records. Many pictures were taken of oversea activities in the Philippines, and in China during the Boxer Rebellion.

Moving picture scenes were made of the Wright Brothers' test flight in 1909, when the Army was considering purchase of its first airplane. Not until 1913, however, were funds furnished for "photographic apparatus and a projector for use in the field."

In that same year the Signal Corps made its first planned motion pictures, covering in a thorough manner the Army remount station near Winchester, Virginia. About this time, too, other special photographic applications were rapidly appearing, such as a kit for reproducing telephotos in the field, and a projector for use in Army tents. This equipment was used under combat conditions during the Mexican Punitive Expedition in 1916.

The Photographic Division of the Signal Corps—forerunner to APSD—was established in August 1917 during World War I. Originally five officers were assigned from the Office of the Chief Signal Officer, but by the end of hostilities the division consisted of 54 officers and 417 enlisted men overseas, and training schools had been set up at Columbia University, Fort Sill, Oklahoma, and at Rochester, New York. Thus it became possible for the Army to utilize

Signal Corps field crews covered the Spanish-American War and the Philippine Insurrection, gathering many historically valuable records.

Among the striking action photographs to come out of World War I is this scene of Army machine gunners in the Meuse-Argonne offensive.

both still and motion pictures to provide an excellent pictorial account of the war.

World War I also produced the first important effort to use motion pictures as training films. As early as 1916 the famous "Close Order Drill" had been made at West Point, and a little later, commercial producers, under supervision of the Signal Corps, made 62 training films. These remained in use until 1928 when they were declared obsolete. By this time sound was coming in, and in 1932 the Signal Corps began producing training films in sound.

With the passing of the thirties

Signal Corps cameramen were in the forefront of invading forces, as in the Normandy landings on 6 June 1944.

and the advent of World War II, a rapidly growing Army was to swell the demands for more and still more training films. By 1937 Training Film Field Unit No. 1 had been set up at Fort Monmouth, New Jersey, and in 1940, a similar unit was organized at Wright Field, Ohio, to produce training films for the Army and its Air Corps component respectively.

To meet the compelling need for training films during World War II, the Paramount Studios in Long Island City, New York, were obtained to provide needed room for expanded production facilities. *(See page 10).* Even so, the demands for training films could scarcely be met.

Still and motion picture coverage of World War II was wide and intensive. Beginning with coverage of the Japanese attack on Pearl Harbor, Signal Corps photographers were on hand to record every important action of the war. As in the days of Mathew Brady, these cameramen were at the front recording Army operations. This time, however, more than thirty were killed.

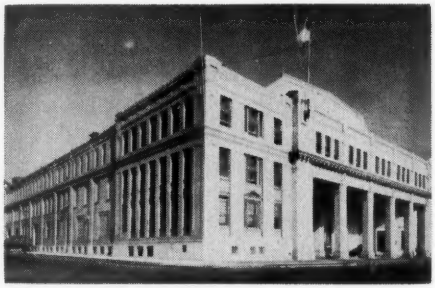
Selected photos of especial importance were sped to Washington from fighting areas in a matter of hours, instead of days as in Brady's time. Transmitted electronically or flown by swift airplanes, newsreels and still shots were often at the Pentagon while the battles depicted were still raging. Staff officers studied combat footage presented in the classified "Staff Film Report" —and training, planning and field operations were often affected as a result. As an example, the doctrine on street fighting was rewritten after staff officers viewed combat footage and discovered important weaknesses. In another case, ordnance experts were able to quickly call for mortar modifications when deficiencies under fire were similarly revealed.

In addition to the vital contributions Army film was making in the purely military sphere, information films were being made available for presentation to the public in the Nation's theaters—thus providing the American people with a vivid, close-up view of the enemy's depredations, and bringing about a heightened awareness of Why We Fight.

The Army Pictorial Center, operating arm of the Army Pictorial Service Division, is covered on the next two pages.

Current operations of the Army Pictorial Service Division will be highlighted in Part II—Army Film Production Today—appearing in next month's ARMY INFORMATION DIGEST.

ARMY



Colonel Bertram Kalisch

OCCUPYING FIVE buildings in Long Island City, New York, including the former Paramount eastern studios, the Army Pictorial Center (APC) is a Class III installation unique among Army activities. It is the major operating arm of the Army Pictorial Service Division. Its product is sound and shadow recorded on emulsified film—images which teach the fundamentals of success in combat. Its stars are the M–1 rifle, the Patton tank, the Nike and Honest John missiles—all the many tools of military science.

Its story themes and plot lines are not of the "whodunit" variety but rather *how* to do it—how to fuel the Nike, how to coordinate the platoon in an attack, how to operate extremely complex sound-ranging and fire-control systems.

Here, through the medium of 16-mm. and 35-mm. film, combat instruction and troop information objectives meet. The soldier not only is taught how to fight, but is inspired and motivated with the dynamic spirit so essential to victory.

Physically, APC comprises a block-long main building, containing five giant stages, sound recording and television studios and executive offices. Across a side street is the Service Division where laboratory processing and film printing is carried on.

The Army Motion Picture Depository, a block distant, contains more than 42 million feet of priceless film from World War II and the Korean conflict. Footage on file ranges from Valley Forge re-enactments, through maneuver scenes, to training films dealing with atomic warfare tactics. In the same building is the Foreign Adaptations Branch where U. S. Army training films are translated into many languages for instruction of allied forces.

A barracks opposite the main entrance houses the 2d Signal Platoon and other enlisted specialists engaged in photographic and television operations. Here also are billeted Air Force members who participate in special projects.

In the Army Post Office building nearby is the final activity—the Film Distribution Division—which ships the finished film strips, training and information films and kinescope recordings to Film Exchanges all over the world.

BUT APC is more than a physical plant of studios and film production facilities. It is a business-like organization which turned out an impressive 600 reels of original films and 16 million feet of originals and prints this past fiscal year.

APC is also people, talents, skills. It is producers, writers, directors, cameramen, carpenters, electricians, and photographic technicians. It is skill, too, of another kind—skill in vividly demonstrating the tactics, techniques and doctrine of combat and survival.

Film subjects are proposed by combat arms—Infantry, Artillery, Armor—or agencies of the Technical and Administrative services, and are approved by the Office of the Deputy Chief of Staff for Military Operations and Continental Army Command for instructional content in accord with approved doctrine.

A script is prepared by a staff writer who works closely with the originating agency and is assisted by its technical advisors. The resulting script is circulated to all interested agencies, and finally comes before a panel, presided over by the Deputy Chief of Staff for Military Operations, for approval. In addition, panel members include representatives of Continental Army Command, Office of the Deputy Chief of Staff for Logistics, and the Motion Picture Branch of Army Pic-

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COLONEL BERTRAM KALISCH, Signal Corps, is Executive for Operations, Army Pictorial Center, Long Island City, New York.

PICTORIAL CENTER

torial Service Division. APC supplies the time and cost estimates and the requesting agency furnishes the justification; then the panel makes its decision.

THREE P's are involved in motion picture production—Preparation (writing scenario), Production (shooting the film on location or in the studio and editing the scenes) and Printing (making a print for final approval, called an "answer print"). When the answer print is approved by all interested agencies, the subject goes into release printing and is distributed to the field.

In the past year, great strides have been made in utilizing quicker, cheaper film recording methods geared to specific instructional needs. Finished training films —both service and commercial—it has been found, cost approximately $1,000 for each minute of running time. Now however, a low-cost alternate can frequently be substituted.

By producing short, five-minute training films in blocks of five to ten on one teaching point each, basic subjects like "Trigger Squeeze," "Positioning a Machine Gun," and "Fueling the Nike Missile" can be turned out for approximately $1,000 each. These are known as Class E films.

In addition, certain types of films—"Fitting a Service Uniform" or "Phonetic German," for example—are performed in continuous TV style and recorded by kinescope at the Center for that same amount or less.

The decision as to which method to employ is made by pictorial experts after discussion with the originating agency. In most cases, "shooting" the basic film with a crew of four—cameraman-director, assistant, sound man, and general helper —has been found to be the most efficient and effective method. But where the subject matter lends itself to continuing closeups—a demonstration timed to the second, for example—the filming may best be done in the Center's television studio and recorded on film by kinescope.

While the quality of a kinescope is not equal to regular filming, substantial progress and improvement has been made. In certain cases, a kinescope is cheaper and faster to produce than a standard motion picture. In others, the regular film technique is preferable.

At APC, motion pictures and television, instead of being rivals as in the commercial world, are both integrated into a technical and tactical team for effective visual teaching.

BESIDES integrating motion pictures and television for specific training missions, APC provides color where required. The use of color today is conditioned by three important considerations —time, money and teaching effectiveness. It takes much longer to make a color film than its less glamorous black-and-white version. The end product costs more than twice as much, with few exceptions—and, for most military instruction, it is usually not required. Accordingly, only subjects like "Camouflage," or medical films where color is vital are filmed in this medium.

However, when the film industry develops processes and equipment which provide color productions as fast and economically as black-and-white, APC will be among the first to adopt and utilize color. By that time audiences will be so conditioned to color that black-and-white will be as obsolete as silent films.

But whether in color or black-and-white, films are constantly being improved to provide the best possible visual teaching tools for military instructors.

In addition to its main Army mission, APC on occasion serves the Navy, Marine Corps and Air Force, the Atomic Energy Commission and Federal Civil Defense Administration.

Last but not least, Department of Defense film releases for newsreels and television news programs, viewed by millions daily, are processed by APC.

Throughout its operations, emphasis is on quality productions at lowest possible cost, and on maximum effectiveness as an instructional medium.

Experts in guerrilla warfare, Army Special Forces train to do "Any Thing, Any Time, Any Place, Any How," as they lead

FIGHTING BEHIND ENEMY LINES

Colonel Edson D. Raff

NO MYSTERY or cloak of secrecy shrouds the concept of carrying war to the enemy's rear door, especially where aroused local groups of freedom fighters spring up in lands which have been invaded. The idea of guerrilla warfare is well known; indeed, it is one of the oldest forms of waging war.

COLONEL EDSON D. RAFF, Infantry, who gained wide experience in guerrilla tactics in North Africa in World War II, is Commanding Officer of the Psychological Warfare Center, Fort Bragg, N. C. He formerly commanded the 77th Special Forces Group, Airborne.

To the casual reader of history or of today's newspapers, it would seem that guerrilla warfare is waged by bands of patriots who more or less spontaneously spring to arms. They harass the enemy's rear area and cause all sorts of damage. Perhaps even more important, they force the enemy to detach large numbers of troops which might otherwise be better employed in the front area.

But the student of military history, strategy and tactics realizes that it is only when properly organized, led and supplied that

Special Forces troopers typify the competency gained by rigorous training in many fields, including . . .

guerrilla bands or partisan troops constitute a truly effective form of support to the overall army effort. Although "guerrilla" means "little war"—a term first applied by the Spanish during the Napoleonic wars—guerrilla action can produce truly big results if properly channelled.

Recognizing these facts, the U. S. Army since 1952 has been developing tough, well trained, extremely versatile soldiers for the express purpose of preparing indigenous people for guerrilla warfare. They will organize, train and lead guerrilla bands into action if the United States ever again has to fight a war where such activities would prove advantageous.

THESE soldiers belong to the Army Special Forces, units of which were first organized in September 1952. Members of Special Forces wear jaunty green berets. They also are distinguished by a general air of competency resulting from an extremely rigorous training program and the *esprit de corps* that comes from belonging to a wholly volunteer unit—the 77th Special Forces Group, Airborne, now training at Fort Bragg, N. C. Still another group, the 10th, also trained at Fort Bragg, is now in Europe.

Men of Special Forces may well feel competent to live up to their motto "Any Thing, Any Time, Any Place, Any How," for they are trained to do any or all of the diversified tasks required in this type of warfare—and do them well. This includes living off the country, cut off from one's own sources of supply; it means organizing, training and fighting alongside people who doubtless will speak a different tongue and have different customs.

Not only must these units be highly trained individually; they must also be well prepared to organize, teach, and then lead into action the indigenous groups. For that is the very essence of effective utilization of guerrilla bands. A few examples from history may well illustrate the point.

THERE WAS, for instance, Francis Marion, "The Swamp Fox," who operated during the American Revolutionary War over much of the same ground where the 77th now is training. He was a gadfly in the flesh of the British who, practically stalemated in the North, had moved to conquer the rebellious Colonies from the deep South. But he was merely an irritant until

Emergency Engineering

Living Off the Land

General Nathanael Greene arrived on the scene to give unified leadership to Marion, other bands, and a small group of Continentals. Together they finally pushed Cornwallis back into Yorktown, and the rest is history.

Much the same was true of the patriot bands in Spain and Portugal who fought Napoleon's invading columns. Until they were given leadership and some supplies by Wellesley (later Duke of Wellington) in combination with British regulars, they did not reach their full effectiveness.

During World War II, several German divisions were diverted from frontline combat in Western Europe because of harassment by guerrilla bands behind their lines. In the Russian area especially, guerrilla activity was a major contributing factor to the defeat of the German Army. The Russians parachuted trained leaders and supplies to the bands operating deep behind German lines.

Excellent results were obtained by guerrillas operating in the Philippines. With leadership coming from Filipino and American regulars who escaped the Japanese net, they denied much of their homeland to the invaders. They even set up what amounted to governments in some places.

More recently in Korea, guerrillas operated on both sides. It is a little-known fact that guerrilla ac-

tivities actually forced commitment of large units of Chinese Communist troops to security tasks.

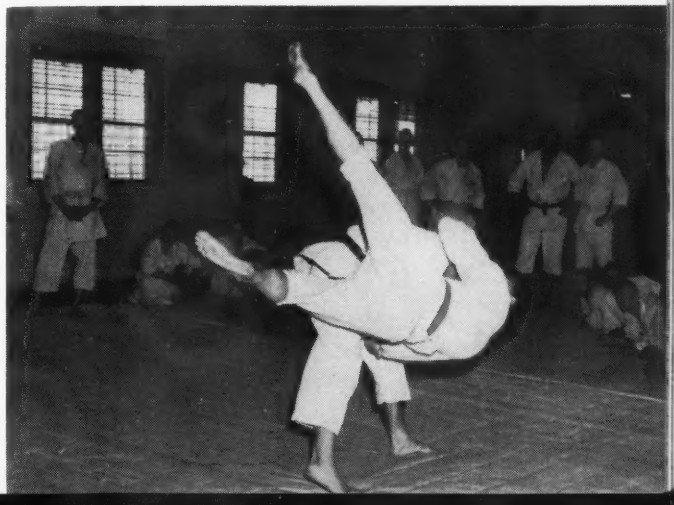
In nearly all of these instances, however, initial delay in providing adequate leadership and supplies brought slower, less efficient results than later when the groups were well organized. Further, improvisation was often resorted to in creating guerrilla forces after war had actually started.

ARMY PLANNERS now developing Special Forces expect to reduce delay and improvisation to the minimum. By having units ready to move in quickly upon the outbreak of war, coordinated operations can be launched against the enemy in support of Army combat operations. Hard-hitting raids, lethal ambushes, devastating blows to disrupt enemy lines of communications may thus be coordinated with the larger pattern of Army strategical and tactical operations.

In most historical instances of guerrilla warfare, the bands have been drawn from the population of invaded countries, and in many cases operations have been confined to enemy-held territory. However, it is foreseen that it is entirely feasible to work with disaffected segments of an enemy's population.

Landing Operations

Hand to Hand Combat



Properly organized and led, such groups could certainly create even more damage than usual.

SPECIAL Forces units come under the immediate supervision of the Psychological Warfare Center. The Office of the Chief of Psychological Warfare, headed by Brigadier General William C. Bullock, formulates policy. Several reasons exist for placing such military effort —which at first glance might appear to be purely tactical—under the direction of Psychological Warfare. Probably the best reason is that the actual performance of feats of arms, combined with the physical appearance of friendly personnel deep in an enemy country, is a real, tangible symbol to the native population who could not otherwise be reached.

Special Forces troops have been compared with the Rangers and British Commandos in versatility and ruggedness. But whereas the latter units fought primarily as shock troops in daring raids aimed at specific military targets, Special Forces units are trained for the long-range requirements of guerrilla warfare. They must be prepared to go into action anywhere in the world by land, sea, or air. They must be able to adapt themselves to any country, any language, weather, terrain, food, or countless other elements which differ from those familiar to them in the United States. Of necessity they must be in top physical condition to survive the hardships that undoubtedly would be encountered.

BEFORE becoming entitled to wear the green beret, all officers and enlisted men must be qualified paratroopers who then volunteer for the Special Forces mission. Any qualified U. S. Army member is eligible to apply through channels as prescribed in Special Regulations 600–160–10, 615–120–54, and Army Regulations 615–620.

Volunteers must complete a minimum of eight months of rugged, intensive training covering a variety of fields. Primary emphasis is given to demolition, light and heavy weapons, communications and medical training.

The entire cycle is broken down into three phases—specialist, branch, and unit training.

Specialist Training consists of courses in medical subjects, communications, light and heavy weapons and demolitions.

The medical training course consists of eight weeks of basic, followed by twelve weeks at Brooke

Army Medical Center, Texas, after which comes no less than 700 hours of practical work in emergency and operative techniques at Fort Bragg Hospital.

The Special Forces medical specialist is thus perhaps the most highly trained enlisted specialist in the Army today. When fully trained, he is ready for anything from extracting a splinter to an appendix.

The communications phase consists of a basic twelve weeks in the unit and at Army Signal Corps schools. This is followed by practical field training which results in a soldier well skilled in all forms of Army communications.

Four weeks are devoted to the light and heavy weapons course. Here emphasis is placed on development of instructors to include every weapon from the pistol to the bazooka and the recoilless rifle.

In demolitions training, four weeks are spent on techniques of destroying rails, bridges and emplacements.

Branch Training encompasses eight weeks of theory plus practical work and classroom instruction in air and amphibious operations; airborne training and operations; communications; fieldcraft and survival; tactics; map reading; methods of instructing; organization of guerrilla forces; demolitions; sketching and many other subjects.

Unit Training consists of thirteen weeks of gruelling work as a unit in the field. But before the aspiring Special Forces trooper is ready for this phase, teams are closely scrutinized for personnel who "don't belong." Harmony must exist among team members if field training is to be successfully completed; still more important, it will be vital in actual wartime operations. The malcontent, the griper, the man who cannot pull his own weight—all are weeded out.

BECAUSE the unit training requires facilities that no single military post can provide, much work is done away from Fort Bragg. Sites are selected to offer a wide variation in terrain, weather and types of operation.

The Special Forces soldier thus receives three weeks of tough preliminary mountain training at Pisgah National Forest in North Carolina before moving on for seven more weeks at the Mountain and Cold Weather Training Command, Fort Carson and Camp Hale, Colo. (See "They Wear the Golden Ram," March 1955 DIGEST.)

This latter phase begins with a cross-country flight from Fort Bragg. At their destination the troopers "hit the silk" and jump into

Fort Carson. This is a prelude to mountain exercises in Colorado's 14,000-foot mountain peaks, under adverse conditions of altitude, cold and deep snow. Also included is a three-week survival exercise in the swampy terrain of Camp Lejeune, N. C. There for one week the men survive on what food the area provides. Clams, seaweed, sea gulls, even rattlesnakes may supply food if none other is available.

Quite the opposite from the snappy, dry cold of Colorado, the men must wade through swamp water that stiffens their shoes and softens their feet—but when they finish they hike back the 100 miles to Fort Bragg.

Still another part of this phase consists of amphibious training, including handling assault rafts with landings from naval vessels, utilization of aqualungs, and carrying out underwater demolitions.

Because of the nature of their mission, a good deal of emphasis is understandably placed on escape and evasion as well as survival techniques. This part of the training is made as realistic as possible.

SPECIAL Forces units are organized especially for their mission, with emphasis on flexibility. Basically, the Special Forces Group is a cellular type of organization composed of highly skilled and specially trained teams, each one capable of operating independently. In actual combat, each small unit would generate an indigenous potential many times its own size.

For control purposes, as in conventional units, the Group has a command headquarters, consisting of Headquarters and Headquarters Company and a command and staff structure comparable to the regular infantry regiment.

But below that level the Group is cellular in structure and may consist of an FD (Foxtrot Delta) team as senior unit. Commanded by a colonel, FD team assumes overall control once it is committed to enemy territory. During garrison duty it plans, trains, and supervises field problems and exercises.

Just below the FD unit come FC (Foxtrot Charlie) teams; at war strength each is composed of six officers and eighteen enlisted men. There are three of these in the 77th. Then come fifteen FB (Foxtrot Bravo) teams, commanded by majors.

Basic unit is the FA (Foxtrot Alfa) team commanded by a captain. In garrison, ten FA teams are under control of an FB team—but in actual combat this would depend on the local situation.

TEAMS are composed of specialists in weapons, demolitions, communications, and field medicine. Not only are they extremely well versed in their own specialty, but all have received thorough cross-training. In this way everybody has many skills in addition to his own specialty.

Because they would be operating in enemy territory, expected to teach and lead as well as to fight, at least three members of each team are linguists. Again, obviously, combat conditions would govern the linguistic requirements.

A Rigging Detachment provides support for airborne commitments. The detachment is responsible for proper utilization of parachutes and the packaging of bundles for aerial re-supply.

Men of Army Special Forces are volunteers. All must be qualified paratroopers. And because paratroopers are originally volunteers, these soldiers are in effect "double volunteers." Airborne training itself provides a screening process, but only the best qualified airborne graduates are accepted for the still more intensive and difficult work that lies ahead. Thus, only the most qualified officers and enlisted men finally wear the distinctive green beret.

Whether motivated by the desire for adventure or realization of the military importance of their mission, these "double volunteers" are constantly developing their stamina and resourcefulness against the day when Army Special Forces teams may be called upon to inspire indigenous peoples to form "Armies of Liberation" in support of the overall Army effort.

By the time they finish their rugged training, all Special Forces men are more than ready to live up to the motto of the 77th Special Forces Group, Airborne—"Any Thing, Any Time, Any Place, Any How."

Your Date with History

A Calendar of Army Anniversaries

1 Apr 1907 . . . School of Musketry organized at Presidio of Monterey.

5 Apr 1832 . . . Ordnance Corps reestablished.

6 Apr 1917 . . . United States entered World War I. Traditionally, this anniversary has been observed as Army Day.

9 Apr 1865 . . . General Robert E. Lee surrenders his forces at Appomattox Court House.

11 Apr 1946 . . . Army Industrial College became Industrial College of the Armed Forces.

12 Apr 1861 . . . First Artillery at Fort Sumter fired first defensive shot in the Civil War.

14 Apr 1818 . . . Office of Surgeon General created to head an Army Medical Department.

17 Apr 1945 . . . United States Seventh Army took Nuremburg, Germany.

18 Apr 1906 . . . San Francisco destroyed by earthquake and fire. United States Army established order and organized relief.

19 Apr 1775 . . . Battles at Concord and Lexington, Mass. Opening shots of Revolutionary War.

21 Apr 1836 . . . Battle of San Jacinto. Victory of Texas over Santa Anna ended Mexican authority.

25 Apr 1898 . . . Congress declared a state of war existed between the United States and Spain as of 21 April 1898.

30 Apr 1790 . . . First general organization of the Army under the Constitution provided for 1 regiment of infantry, with 3 battalions of 4 companies each; 1 battalion of artillery, with 4 companies; for a total strength of 1,283. A 3-year term of enlistment was authorized.

"At Home" Abroad—

Housing in Germany

Colonel Marvin C. Ellison

MANY SOLDIERS and their dependents returning for a tour of duty in Germany will be surprised to discover what appear to be bits of United States suburbs, transplanted into the midst of a landscape they remember as being strictly Old World.

Apartment "villages" are springing up near Army posts throughout the American Zone—housing which does not clash with the existing architectural style but which is specially designed for the area, and for use by German families when the present need for them is ended.

They are being put up to solve two big problems—that of providing more housing for dependents, thus hastening concurrent travel, and to aid recovery of the German economy by replacing requisitioned dwellings. Since they are almost completely furnished by the Army Quartermaster, American families need bring only a few household goods—notably favorite kitchen ware, washing machine, electric irons, radio and other appliances.

Typical of the developments is that at Darmstadt, where 36 buildings—33 of them three-story apartments—will house 594 families and include shops, filling stations, recreational facilities and schools.

Designed by the Engineer, United States Army, Europe, and containing many American innovations, the apartments also are designed to meet German standards of living. In each building is a finished basement and attic. The basement contains the utility room, laundry and drying rooms, and a storage room for each family. In the attic are playrooms for children, and quarters for family maids.

In addition to a spacious living room, dining alcove and kitchen, the living quarters have 2-, 3-, or

COLONEL MARVIN C. ELLISON, Corps of Engineers, is Engineer Officer with Northern Area Command, United States Army, Europe.

4-bedrooms. Two of each size units are located on each floor level. Kitchens look like their Stateside counterparts, with cabinets, double sink, a refrigerator and a range. The bath is fully tiled with built-in tub and shower. In the 4-bedroom units an extra lavatory and toilet is provided.

Heating and hot water come from a central plant, thus saving money and space. Electricity is the usual 220-volt, 50 cycle current standard in Germany. Transformers to reduce the current to 110-volts for electric irons, radios, vacuum cleaners and other appliances may be purchased locally. It will probably be necessary to alter American-built motor-driven appliances which usually are made for 60 cycle current.

WITHIN the housing area are well equipped playgrounds for children. A 20-room elementary school is within easy walking distance. The Exchange Service maintains a beauty parlor, barber shop, and service station.

Funding for construction of family housing, as well as troop housing, has been under the *Deutsche Mark* program. Land has been furnished by the Bonn Government and will revert to the German economy when no longer required for American forces.

Most comforts and conveniences taken for granted in the United States will be found in the Darmstadt community. Schools, chapels, clubs, commissaries and post exchange stores are located nearby.

For many soldiers and their dependents in Germany, Army-provided housing is an important first step in establishing a feeling of being "at home" abroad.

Living Room

Kitchen

Bedroom

Information to and for the soldier is the goal of

Army News Service

Captain Philip A. Farris

"MORALE," General of the Army George C. Marshall once said, "is the state of mind. It is steadfastness and courage and hope. It is confidence and zeal and loyalty. It is elan, *esprit de corps,* and determination."

An essential factor in developing and maintaining a high state of morale is troop information—information which explains the "why" underlying military policies, orders, directives.

Why? Why? Why? is the question perhaps most frequently, most demandingly asked by the American soldier. It is his birthright to expect an answer.

To help fulfill that basic need, under the supervision of Troop Information and Education officers, Army units the world over publish some 500 Army newspapers, varying in format from two-page mimeograph "sheets" to 24-page letterpress papers. Although differing in size, content, and method of production, these publications have one reason for existence—to provide information to the troops.

As a troop information medium, the Army newspaper is a most effective tool and an aid to the commander. When properly utilized, it can add immeasurably to the development of morale and unit esprit.

RECOGNIZING this, the Office of the Chief of Information and Education (CINFOE) inaugurated the Army News Service. This service, a responsibility of the Troop Information and Education Division, provides news, editorial, and feature releases directly to TI&E officers of major commands and to Army newspaper editors. Releases consist of timely and pertinent information affecting the individual soldier, his family, and his unit.

Initially, Army News Service will reach Army papers as appropriate news becomes available. Eventually, if required, the service can be geared for weekly distribution of news, editorial, and feature releases of particular interest to the individual soldier.

Inaugurating its service in September 1955, ANS mailed to all Army newspapers a Fact Sheet on the Reserve Forces Act of 1955. This release, prepared by the Plans and Policy Division of the Office of the Chief of Information and Education, is an example of an additional service to be rendered occasionally by ANS when requested by Department of the Army staffs.

Functioning as a direct link between the Chief of Information and Education and Army newspaper editors, ANS assures quick dis-

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semination of timely and important information that affects the soldier's welfare and his service in the Army. A well-developed plan assures timely coverage.

As "leads" on possible stories develop, members of Army Newspaper Section, Troop Information and Education Division, CINFOE, are notified by the interested Department of the Army staff agency. A CINFOE representative then confers with the Technical Liaison Officer of that staff, and gathers the full details. The item may pertain to a revised Army Regulation, a planned Circular, directive or a change in existing policy.

Whenever a newsworthy story emerges, it is put into journalistic form. The release is then submitted to the staff agency for concurrence and clearance before being dispatched to Army editors worldwide. A total of nineteen Department of the Army staff agencies cooperate in this phase of Army news coverage. In addition, feature and editorial releases are originated from time to time in the Office, Chief of Information and Education.

Still another type item, called "Highlights of our History," is designed to arouse an interest in American military history by recounting outstanding military achievements of the past. The first item concerned "The Battle of Saratoga." Many other significant events from military history will be made available in capsule form.

USE OF Army News Service releases is not a mandatory requirement for Army newspaper editors, but TI&E officers are being encouraged to publish those items that support local troop information objectives. When appropriate, newspaper editors are urged to re-write these releases to emphasize local applicability. Stressing the "local slant" will enhance the value of ANS releases and more effectively support the commander's information aims.

Local commanders also have a clear cut responsibility to support Department of the Army troop information objectives. The policy of telling the soldier what is, or will be, happening that affects him, and also *why* it is happening, is in itself a cardinal leadership principle. In both of these areas, Army News Service assists the commander by furnishing essential information to his unit newspaper.

Army News Service is expected to augment the Armed Forces Press Service and Army News Features clipsheets, neither of which completely covers the Army scene in adequate detail. AFPS coverage is definitely limited by the necessity of allocating space to all elements of the Armed Forces, while ANF, a function of the Public Information Division, Chief of Information and Education, is aimed specifically toward the commercial press of the United States. With the establishment of Army News Service, a forward step has been taken to fill the gaps in coverage of many newsworthy matters emanating from the Department of the Army.

Soldiers, always eager to know "what's cookin' and why," will benefit by getting the news immediately, in easily readable style. This service is designed expressly for them, so that the basic elements of morale —*confidence, zeal* and *loyalty*— may be developed and maintained.

Demonstration on the double—

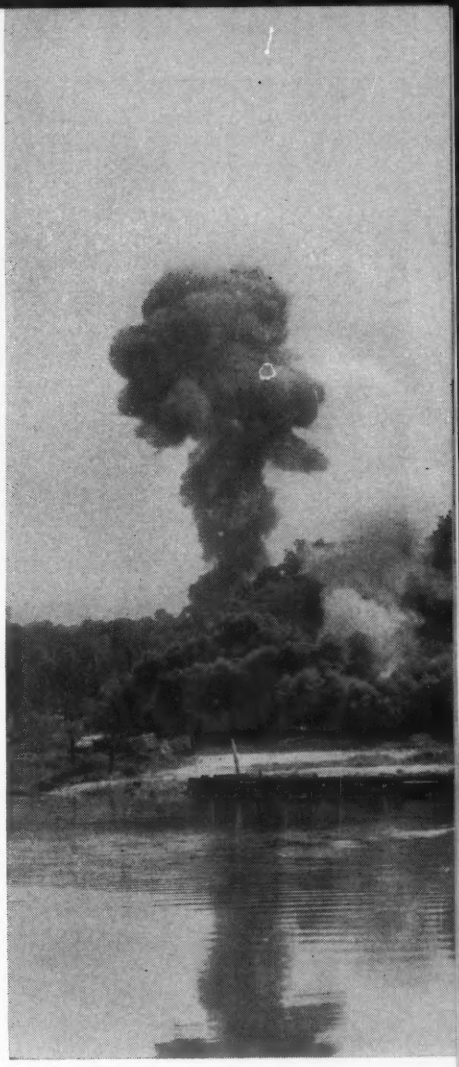
Assault River Crossing— Combat Engineer Style

TIME IS TELESCOPED to expedite training of Engineer officers and enlisted men at the U. S. Army Engineer Center, Fort Belvoir, Virginia. There, in a speeded up demonstration, combat engineer soldiers illustrate in thirty minutes time an assault river crossing which might take hours in actual combat. Devised by The Engineer School's Department of Military Arts, the exercise is used to teach application of basic tactical principles and correct use of specialized engineer equipment.

Beginning with a small-scale reconnaissance action, the demonstration gains momentum as a simulated atomic shell bursts. Artillery, tanks, demolition charges, and small arms are brought into play against stubborn "enemy" concentrations on the far shore.

Under cover of the combined fire of a combat team, engineers quickly construct a standard aluminum footbridge and a variety of rafts for heavy equipment. As the exercise reaches its climax, infantry troops advance across the footbridge, jeeps and tanks are floated across, and the fighting rages on the far shore. "Enemy" forces are driven back, and with the buildup of friendly troops the bridgehead is secured.

Approximately 800 engineer troops of the 79th Engineer Group (Construction) participate in the operation. For demonstration purposes, some of them act as infantrymen, a familiar role for combat engineers. Training of this type is also carried on at Fort Leonard Wood, Missouri.



A simulated atomic artillery shell is fired on the enemy strong point near the crossing site (right). Then Infantrymen and Engineers prepare to cross in assault boats (above). The first landing wave storms the "enemy" shore as other troops prepare for the second wave (below).

As the operation advances, the Division engineer flies over to inspect footbridges and shore emplacements.

After the initial assault waves land, Engineers construct foot bridges (two in a total of six minutes) for movement of Infantry force (above). Tanks and other heavy equipment are ferried across (below).

Carrying land mines, Engineer troops advance inland (above) while tanks and Infantry small arms fire support the assault troops (below).

After the second wave completes its crossing, the Infantry prepares to storm an "enemy" gun emplacement.

At Brooke Army Medical Center, burn casualties find new hope for recovery, due to efforts of these

Medical Fire Fighters

Grace W. Vincent

SINCE THE FIRST fire arrow turned a wooden man-of-war into a floating holocaust—since burning pitch poured from a fortified city on enemy soldiers scaling the walls—the problem of how to treat burned fighting men has been a serious one for practitioners of military medicine.

Its seriousness has intensified through the centuries as fire became an ever more effective combat weapon. When the first atomic bomb burst over Hiroshima in 1945 leaving thousands seriously burned, the problem of burn management assumed gigantic proportions.

Developments in nuclear weapons since then foretell the possibility of countless burn casualties on the battlefield and on the home front in future wars. The lethal effects of flame-throwers, phosphorus bombs, and gasoline explosions in past wars could be multiplied manyfold by atomic weapons.

To find an answer to the mounting burn problems, the Army Surgeon General in 1947 turned to the staff of the Surgical Research Unit at Brooke Army Medical Center. Its assigned role—to discover how to manage burn injuries so that the serviceman might have the best possible chance of recovery.

The Unit was chosen to spearhead the study because it had worked with the basic tools in other fields of medical research. In 1943, it pioneered research in penicillin, and later worked with other antibiotics. While serving with the Surgical Research Team in Korea, its members had studied treatment of surgical cases, including treatment of shock, of blood stream infections and of tissue damage. All of these problems and more, too, arise in the treatment of burns.

During the past eight years, this group of less than 100—medical officers, scientists, nurses, enlisted technicians and civilians who staff the research laboratory and the treatment ward of the Brooke Unit —have been studying the basic factors involved in burns and testing new treatments before they are used for human patients.

The Unit's 35-bed ward in Brooke Army Hospital is the clinical laboratory. Here Armed Forces burn casualties are brought from all over the world for treatment and study. Military Air Transport Service planes fly patients to the Army Burn Center from any place in the world where U.S. servicemen are stationed. Other air evacuation crews

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are ready around the clock to fly Unit teams to the bedsides of major burn cases.

THE threefold mission of the Unit is broken down into these elements—research in burn problems, treatment of burned patients, and teaching of burn management.

The three are so interwoven that it is difficult, if not impossible, to separate them. Basic research must precede treatment, but proof of the validity of the research lies in the patients' reactions to treatment. Through research and treatment, the staff and professional observers visiting the Unit are learning, then teaching others. Selected Navy and Air Force medical officers and nurses join the Army staff for training. At military and civilian professional and lay meetings, staff members tell of advances which have been made.

This same knowledge of professional techniques is as available to both military and civilian physicians as the nearest telephone. Specialists of the Unit are ready at any hour to consult in person or by telephone. They, in turn, call on civilian specialists as the need arises.

For cases needing more expert care than a telephone consultation offers, teams consisting of a physician, a nurse and a technician are ready to fly to patients' bedsides, prepare them for transportation, and attend them on the flight to Brooke Army Hospital. By special arrangement, an air evacuation squadron at nearby Brooks Air Force Base stands ready to fly a burn team to any place in the country at an hour's notice. To expedite matters, even long-established military procedures are simplified. Formal orders are published less than half an hour after the call for help comes.

THE problem of burn study resolves itself into finding the answer to two questions: How can hundreds, or even thousands, of burn casualties be cared for in case of mass disaster? And how can death be prevented in cases of severe burn?

Physicians and scientists of the Research Unit have found possible answers to the first question. They have partially answered the second. But each new answer creates new problems, which must be tackled systematically as they arise.

To care for mass burn casualties, the Unit turned to exposure treatment, a method first described in medical literature in 1887 but gradually abandoned in medical practice. Exposure treatment is exactly that. The burned areas remain unbandaged, exposed to light and air.

When the Unit began its inquiries, physicians were using pressure dressings—huge bandages that had to be changed daily—in treatment of burns. Obviously, it would be impossible to stockpile enough of the big dressings to care for hundreds of cases. Just as obviously, the professional care required to change bandages under anesthetic would not be available if a mass disaster occurred.

The staff of the Surgical Research Unit decided that the forgotten exposure method had merit. Some 200 patients later, they were sure it was one of the answers, in spite of the fact that pain during the first several days is more severe in ex-

posed burns than in those covered with dry dressings. Opiates make it possible for most patients to bear the initial pain.

In severe cases treated by exposure, a second degree burn discharges fluid that dries in two or three days to form a hard crust over the burned area. This crust serves as a natural dressing for the burn. In a third degree burn—one which damages the full skin thickness and may extend into muscle and bone —there is a little discharge but the charred or pearly white dead skin of the burned area dehydrates and becomes a protective covering for the deep wound.

Nature in each case provides a dressing that acts as a barrier to infection. Best of all, most of the work of caring for the patients at this stage of treatment can fall on the shoulders of technicians and aides, just as it would inevitably in a mass disaster.

When the patient reaches the hospital, the burned area is washed carefully with mild, white soap, all blisters are opened and detached skin is cut away. Penicillin in huge doses for all burns of more than 20 percent of the body surface helps combat infection until the natural cover forms. That is the initial treatment when the exposure method is used.

In second degree burn cases, the crust will flake off in two or three weeks, leaving healed tissue beneath. In instances of third degree burns, the protective covering of charred skin, called eschar, must be surgically removed. The patient is then grafted with healthy skin—a job for the experts.

IF MASS disaster strikes, the exposure method of treatment is one answer. Another lies in a simplified method of computing fluid therapy for treatment of shock.

The fluid calculator, a computer based on the slide rule principle, guides those who may have to treat burned patients until they can reach specialist care. Developed by two members of the Surgical Research Unit staff, the calculator shows how to estimate the degree and extent of burn. From these two facts, plus the patient's estimated weight, even a novice using the calculator can determine the amount and type of fluids needed in the first 48 hours.

The fluids used include a combination of whole blood, dextran or plasma, salt solution and dextrose in quantities varying with the size of the patient and the depth and extent of the burn. Anyone qualified to give fluids intravenously can be of immeasurable aid in saving seriously burned patients from death by shock in the first 48 hours, Unit members maintain, if he uses the pocket-size calculator intelligently.

Should an atomic attack come, physicians will be few and medical aid stations will be manned by dentists, registered nurses, technicians, or laymen with first aid training. It is for these that the simplified fluid calculator was devised.

STILL other emergency treatment measures are used by burn specialists. A tetanus shot should be given the patient. He may need a small dose of morphine to ease pain. An initial massive dose of penicillin is followed by other large injections until the crust or eschar seals the wound from contamination. Insertion of a urinary catheter

permits the necessary check on kidney function. If the face is burned or there is evidence of respiratory burn, a tracheotomy (a surgical opening into the windpipe) will give the patient a chance to breathe.

The Unit has gone even further in its search for a simplified treatment to meet the exigencies of a mass burn disaster. The "walking burn" case, staff members say, can take care of himself if he is given a simple means of treatment. To meet this need the Unit has planned a "burn kit" to be dropped from planes or helicopters. It will contain packages of salt and soda to be mixed with water and swallowed. This will supply lost fluids. Antibiotic pills to reduce chances of infection will be in the kit, too. If printed directions are followed, the lives of some burn casualties unable to reach aid stations may well be saved.

THE second question that the Unit seeks to answer is how to cheat death in cases of severe burn. This is the subject of research not only by the Brooke group, but by civilian groups in this country and in Europe.

"Give a burned man replacement for the fluids he loses and give it to him quickly. You are giving him a chance for life." That, say the specialists, is what statistics prove.

When the Unit began its study, deaths of burn patients were chiefly from shock during the first 48 hours after injury. But once fluid losses were routinely replaced, it was noted, deaths of patients dropped during this two-day period and kept dropping. Today, few burned patients who have immediate professional care die of shock.

But as shock deaths diminished, septicemia, or blood stream infection, rapidly climbed to the spot of top killer of burned patients. The macerated tissues of a deep burn are the perfect breeding ground for bacteria which invade the blood stream and may eventually kill.

Research in this area continues. No stock answer has been found. Each individual patient presents a different problem once the bacteria start their work. Chloromycetin helps one, bacitracin another, a third responds to erythromycin, and a fourth to a combination of antibiotics. For two of each three patients who develop septicemia at the Center, nothing works. But only 16 of each hundred get a blood stream infection.

THIS much the specialists have discovered: Even though antibiotics are often powerless, a dressing of donated skin on a burn cleaned of its dead tissue offers the greatest hope for avoiding and combatting septicemia. The need for skin grafts has therefore increased.

If the burn area is not too large, the patient's own skin is the best graft, for it will continue to live and grow. But if he does not have enough unburned skin left, then temporary substitutes must be found.

Like other burn study groups, the Unit turned to skin donors as a possible solution. But the donor himself presents additional problems for surgeons. He must be hospitalized as a surgical case, and his slight wound (resembling a scrape) could become infected.

Whenever possible, the specialists use skin donated from persons who died from six to eight hours earlier. There are a number of advantages in using this postmortem skin. No new patients are created; skin is available without a separate operative procedure; and patients requiring a series of grafts over a period of time do not develop sensitivity to the skin of a particular and regular donor.

Skin taken in postmortem operations is usable within a few days, but research is extending this period materially. The Unit at Brooke is working on plans for a skin bank where grafts of healthy skin may be stored for as long as a year until they are needed to save lives. Such a skin bank, burn specialists say, will be necessary if mass disaster strikes.

IN OTHER studies, the metabolic group of the Unit is exploring the effect of nutrition upon recovery. This may lead to another calculator which will tell how much and what type of food will give a patient the best possible support toward recovery.

A research dietitian in the Unit has developed and tested a drink —a sort of health beverage of dehydrated food to be mixed with water—which could be dropped from the air or shipped in bulk to supply, in concentrated form, all the nutritional elements needed to support recovery of burn cases in mass disaster.

Only by a minute and careful study of each individual's reaction to burns can average standards of reaction be determined and treatment methods standardized to fit mass casualty needs.

A TYPICAL case from the more than 700 burn patients who have been treated at the Center shows just how carefully each step of therapy is managed and recorded.

Airman Second Class Jones, 22, married, and the father of a five-months-old daughter, is a do-it-yourself addict. He was replacing the battered linoleum in his apartment with asphalt tile, when the blow torch he used to soften the tile ignited an open can of cleaning fluid. The resulting explosion showered the flaming fluid on Jones and all over the kitchen. The fire department extinguished the flames, and an ambulance rushed Jones to the hospital at a nearby Oklahoma Air Force Base.

Here Jones' luck took a turn for the better. A young Air Force medical officer remembered a lecture on the work in burn research being done by the Surgical Research Unit at Brooke. He reached for the telephone, and within ten minutes he was describing the first massive burn he had ever seen to a specialist of the Unit.

As a result of telephone advice, Jones's treatment began immediately—and the records that will help standardize treatment for other such cases began, too.

The Air Force physician estimated that the burn covered 50 percent of the body surface, 45 percent of it third degree. Jones is 5'10" and weighs 165 pounds. So, on advice of the Surgical Research Unit specialist, the Air Force officer started dextran and electrolyte solutions intravenously at the rate that would give Jones the proper quantity during the first critical 48 hours.

He also gave Jones a tetanus shot

and 1,000,000 units of penicillin. Since Jones had facial burns near his nose and mouth, a tracheotomy insured a clear air passage.

All body wastes, even the bed linens that absorbed the exudates from his burns, were saved so that the Unit laboratory might accurately measure his chemical losses. This would provide the data needed to systematize future treatment.

IN THE meantime, 600 miles away, the emergency burn team started its activities at Brooke. Within an hour they boarded the Flying Samaritan transport at Brooks Air Force Base, 15 miles from the hospital.

Two and a half hours later, the plane touched down at the Oklahoma air base. Waiting staff cars rushed the team and their equipment to the patient's bedside.

Here they found that, thanks to the telephone consultation, Jones was receiving the proper fluids in the proper amounts to combat shock. He had had penicillin. He had had tetanus antitoxin and morphine. He could breathe.

Because of the large area of open wound and its depth, the burn specialists bandaged Jones to minimize the possibilities of infection en route.

After a quick ambulance trip to the flight line, Jones was lifted by an automatic elevator, litter and all, through the big bay in the side of the C–131. The medical flight crew strapped his litter into place and the big plane started its return flight to San Antonio, just two hours after it had landed in Oklahoma.

The life-saving fluids—dextran and electrolytes—continued to drip into Jones's veins.

When the plane landed at Brooks AFB, an Army helicopter ambulance waited to take Jones on the last lap of his journey to Brooke Army Hospital. Once again, transportation by air instead of over rough and tedious roads made his trip medically safer.

IN THE ward, Jones was unbandaged. From then on his burns were treated by exposure. He was weighed, then placed on a Stryker frame instead of a regular hospital bed. (A Stryker frame is designed so that a patient may be turned from back to stomach sandwiched between the mattresses, untouched by hands.) Laboratory tests were made and fluids and penicillin continued.

Ten days later, Jones went to surgery. He had complete anesthesia while the eschar was removed and dead tissue excised. This was his only complete anesthesia. Local anesthetic agents deadened pain during the nine subsequent grafting procedures. Thus, the burn surgeons saved Jones the extra strain of complete anesthesia.

On the day following removal of the eschar, the medical officers used Jones's own skin, taken from his back, to cover burns on his hands and right leg. Skin taken from an auto acident victim covered his other leg and the burns on his chest. His facial burns, nearly entirely second degree, were doing well. He received whole blood during each of his successive operations. In all he had 21 pints of blood.

After grafting, vaseline gauze dressings and pressure bandages held the new skin in place. His hands were fixed in a position of motion (as if grasping an ordinary

water glass). The tracheotomy was closed and he breathed normally again.

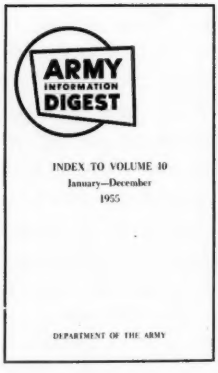
Later, when the patient was not doing so well, tests showed that septicemia had developed. The specialists gave him antibiotics; they cleaned his injuries and regrafted the ones that had lost their cover of donated skin. Since his appetite was negligible, he was fed that specially developed beverage by nasal tube. In fact, he was fed constantly by a small electric pump that delivered the beverage directly to his stomach. Septicemia was conquered.

THE DAY finally came when Jones, his burns covered with his own skin, moved to an ordinary bed. Then he sat in a wheel chair. Finally, he took his first steps in three months. Then physical therapy and exercise were the order of his hospital days. But first he went home for 30 days' sick leave. He came back weighing 15 pounds more than the 120 he had thinned to since his burn.

Jones has more than medical treatment and research to thank for his recovery. They were most important. But other patients in the ward, visits from his family, and planned entertainment all contributed to his recovery.

The burn of Airman Jones might have happened to Mr. Jones. Most of the patients of the Unit—military, dependents and civilians alike—were injured in typical, everyday accidents. Then, too, there are military-type burns even in peacetime—a gun explodes, a grenade is faulty, a jet plane plummets in flames. But whatever the cause, the resulting injury is a painful and serious burn.

Burns caused by an atomic disaster would still be burns. The principal difference would be in the quantity. Through the individual cases they treat today, members of the Surgical Research Unit hope to learn enough—and to teach enough—to insure that this country could meet the horrors of mass burns and save a maximum of lives, if ever an atomic holocaust occurs.



ARMY INFORMATION DIGEST INDEX AVAILABLE

AN INDEX to the 1955 issues of ARMY INFORMATION DIGEST has been prepared in matching format. Initial distribution is now in progress.

THE DIGEST INDEX will *not* be stocked by AG Publications Centers. Those units not receiving the 1955 Index by 1 May 1956—and those requiring extra copies—may obtain a limited number of copies by letter request direct to Editor, ARMY INFORMATION DIGEST, Cameron Station, Alexandria, Virginia.

A barrage of "why's" by Quartermaster Field Observers ultimately leads to improved field equipment

Answering the Soldier's Needs

George J. Schneider

WHY DO some of the ratchet starters on the motors of large heater units fail?

Why is a 65-cubic-foot portable refrigerator made by Manufacturer A better than the apparently identical unit of Manufacturer Z?

Why do troops like one nylon sleeping bag liner and dislike other kinds?

Why are roller conveyors preferred to the skate variety?

The Quartermaster Field Observers, believed to be in a category unique among the Technical Services, might be said to have "why" on the brain—as indeed they have. Operating worldwide, they are the end-item trouble shooters for the scientists and technologists of the Quartermaster Corps' Research and Development Command, Natick, Massachusetts.

Despite every conceivable laboratory and engineering test to which a new item of supply may be subjected, the final trial of its effectiveness is in the field. Fortunately few Quartermaster articles, among the many thousand in the supply line, require remedial change or replacement. But for one to read an observer's field report is to gain a hasty and erroneous impression that everything has something the matter with it. The countless items which the observer finds in good working order generally are not mentioned.

Unfavorable reports, however, do have definite value to Quartermaster Research and Development scientists. As a direct result, a work order is issued to cover the need, or redesign; changes are specified, and an improved item or component emerges in due course.

NEED for this sort of field observation was early recognized by The Quartermaster General. During World War II, observers were located in each theater of operations, usually in the forward areas. Two Quartermaster officers took part in the Anzio landings and subsequent fighting while evaluating the functional worth of uniforms for such operations. Enemy army clothing also was frequently

GEORGE J. SCHNEIDER is a Military Analyst attached to the Field Observation Branch, Quartermaster Research and Development Center, Natick, Massachusetts.

WHY clothing wears out in certain ways gives answers leading to improvements in this vital item of supply.

brought in for study, sometimes with the wearers still kicking inside. The findings of these observers formed the basis for clothing requirements in the invasion of Southern France.

Due to many unforeseen and entirely novel situations encountered as the war expanded to global proportions, many soldier items unproved as to military requirements had to be obtained from civilian shopping shelves in a hurry. In a number of instances Quartermaster observers found such items capable of meeting emergency military needs with few modifications.

THE LAST WORD about an article of soldier use is spoken during actual combat. If it fails then, the item's development has been a waste of time and money. Much worse, the soldier's capacity to fight and his chance of survival are jeopardized. Hence, the responsibility of the Quartermaster to provide items as completely useful as modern science and human ingenuity can make them.

But man-made things get out of order, sometimes for unforeseen reasons, and the work of the research and development people is never done. Any so-called "final" result is not final at all; it merely represents the latest thinking on the subject. Better concepts are always just around the next research corner. Field Observer findings speed the development work toward the next bend in this endless road.

During hostilities, as in Korea, much of the observer's time is spent in foxholes and bunkers where the really acid tests are in progress. There information is as basic as information ever can be. From the observer's point of view, supply points and salvage dumps—especially the latter—are prolific information centers.

A HUGE heap of shoes is turned in as salvage. Is there a pattern of failure, such as heel detachment? If so, make a note of it. Or perhaps the observer has been briefed specifically to study salvaged shoes because a report of excessive heel failures has already come in from a Zone Quartermaster.

The Quartermaster observer is carefully briefed, verbally and in writing, before he leaves the Center. The responsible technologists have certain items primarily in

WHY, a Quartermaster observer asks an operator of an M–1950 shower unit, as he seeks possible ways to improve equipment.

mind, the field performance of which they are anxious to have evaluated.

While such briefings serve to direct field investigations along certain lines, they indicate only a portion of what the observer does. What he finds within the statement of his mission he reports, but he is not limited as to what should be observed. His attention is often drawn to certain items by soldier gripes. If these are consistent and numerous, the matter is investigated.

It is the job of the observer to pinpoint the problem, find the cause, and report the facts and any suggestions he may receive concerning a possible solution. In carrying out these three phases of his job, it is most important that representative samples be obtained and that the facts have statistical validity.

The observer is not expected to perform the extensive statistical analyses necessary to determine whether a sample is typical or adequate. He can, however, partially overcome these limitations by obtaining as large a sample as possible, together with pertinent factual information on all the items represented by the sample which he has had an opportunity to observe.

By the time the observer arrives at his destination, he already has a plan for pursuing his mission. This plan, based on a known requirement for information, is followed as closely as possible. The observer also is alert for other problems of concern to the Research and Development Command.

AS EACH additional problem is indicated, the observer decides whether the trouble is widespread. In this respect such queries as: What item is giving you the most trouble?, and How can it be corrected?, repeated at every opportunity, will provide a variety of answers from which isolated complaints may be discarded. When a pattern of similar complaints begins to develop, however, the problem is more thoroughly studied for it may well be one that merits mention in a report.

It then becomes the job of the observer to define the problem, find the cause, and report accordingly. Definition of the problem is the most difficult step. Once it is decided just what information is desired, obtaining it is relatively

easy. When the problem is not adequately defined, the data gathered tends to be so general or erratic that a clear analysis by research and development technologists is next to impossible.

Often it is necessary to confer with field personnel who have "inside information," so to speak, on certain aspects of the problem. The observer emerges from such a conference fortified with at least five pertinent leads—the nature of the information desired; the reason it is desired; the relationship of this problem to similar problems; the most probable method of remedial attack; and the type of answer required, if opinion sampling methods are to be used.

WHY insulated food containers fail, leads to remedies that mean better, more appetizing food for soldiers in the field.

WHEN the problem has been clearly defined, information can be gathered by objective measurement or testing; by observation of actual use in the field; and by interrogation of users.

Usually measurement or testing and observation give more objective results than questioning. The latter often provides subjective information influenced by the human qualities of both user and questioner.

Reverting to shoe "turn-ins" as an example of the observation method, the observer would determine whether the soles or heels break down before they wear out. The data must be analyzed with full knowledge of the *conditions* under which the shoes were worn, or the type of troops who wore them.

The question-answer method requires the user to voice opinion, or recall facts such as when, where and under what conditions his shoe failed. But the many variables affecting the answers obtained by such questioning are difficult to control. In most cases, a combination of both methods is best since the information from questioning gives meaning to observed data. However, the observer's plan of action is sufficiently flexible to permit variation in his approach.

A TYPICAL example of a user-observer-technologist team play—

to cite an actual case—followed these steps:

A soldier, during Korean hostilities, called a Quartermaster observer's attention to damage being done to the canvas case which carries the entrenching shovel. The corners of the shovel were cutting into the fabric. One suggestion was that these troublesome shovel corners be made rounded.

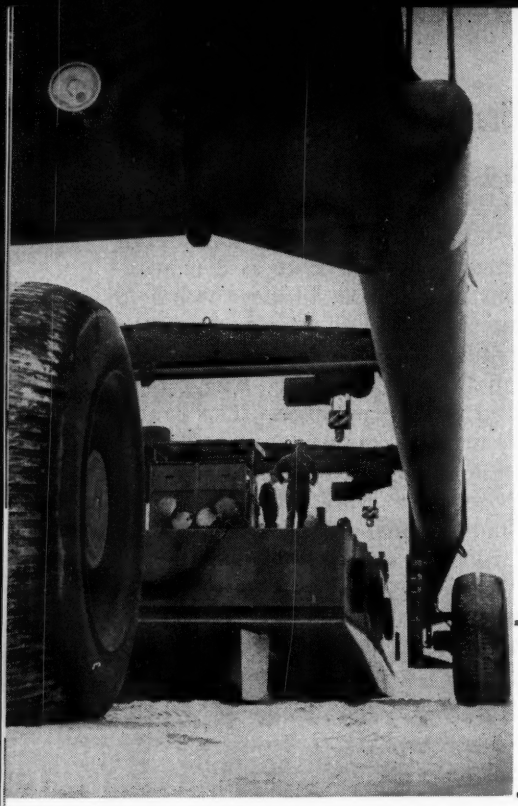
When technologists at the Center received this suggestion, a study was undertaken. The result was that a horizontal strip of webbing was incorporated in the carrier's flap to reinforce the wear area. This in turn led the technologist to consider abolishing the flap altogether and substituting a simple strap to hold the shovel in its case. Such a solution ultimately will result in monetary savings, simplification in manufacture, and quicker accessibility by the soldier in the field.

In another instance the observer found that tentage in the field was subject to severe fire hazard due to frequent gasoline leaks around the drum outlets leading to the tent heaters. The fluid oozed along the rubber hose and dropped in a puddle at the point where the hose went under the tent, saturating the canvas. The solution was to attach a concave baffleplate on the hose, located well back from the tent, to allow possible drippings to evaporate harmlessly.

Photographs of item failures are part of the observer's work tools. Pencil sketches also serve a useful purpose. From these, plus a clearly written definition of problems, Quartermaster research and development technologists can refresh their concepts of given end-items and institute the next advance in design or modification.

The successful observer must be a diplomat of the first order. His mission is as delicate as it is arduous, and his relationships with field personnel at all levels—from the bunkers up through theater headquarters—require tact, friendliness, and infinite patience. The results of his field contacts are the product of a many-sided individual whose powers of observation are constantly enhanced by liberal applications of common sense.

WHY fire boxes of a mobile laundry drying tumbler crack means changes that aid cleanliness under field conditions.



Landing Craft Retriever To the Rescue

The Landing Craft Retriever is designed to straddle a crippled vessel, then lift it from the water and carry it ashore.

A SPRAWLING olive-drab colossus wading through the ocean surf on the world's largest tires promises to reduce one of the most dangerous hazards to the success of amphibious operations—congestion at the beachhead.

Labeled the Landing Craft Retriever, the new Transportation Corps vehicle can speedily "right" a capsized or broached craft, transport it to deeper water, or carry it bodily out of the water and onto shore for necessary repairs.

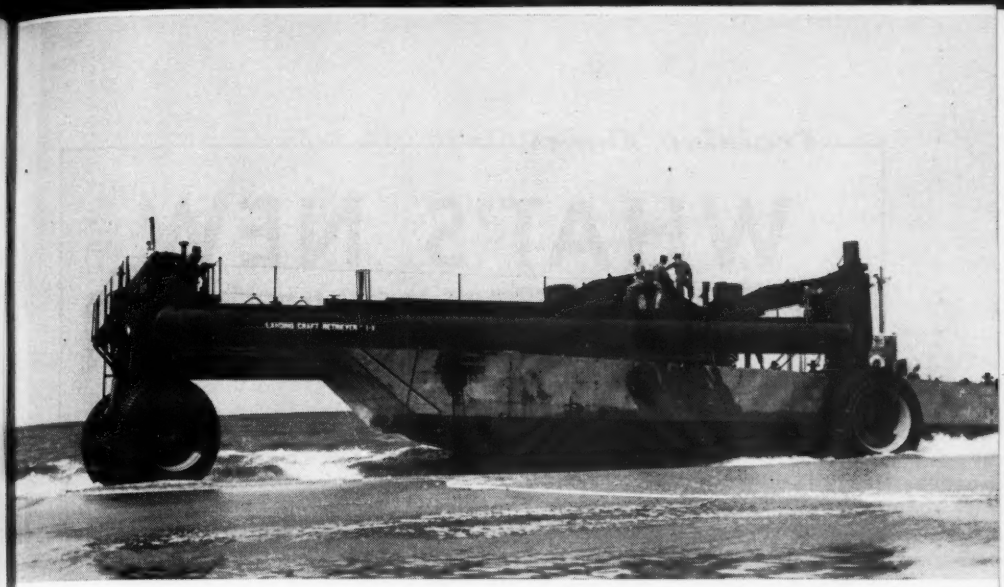
Dubbed "Beach Buggy" by its operating personnel, the vehicle was constructed in answer to an Army requirement for a new concept of retrieving equipment impaired during landing operations—whether by enemy action, high winds or rough seas.

One of the major concerns of beach operation commanders is the danger of congestion at the unloading site. Sunken or grounded landing craft may slow the unloading of supplies and jeopardize success of the amphibious operation.

To overcome this hazard, the Transportation Corps Research and Development Command conceived the Landing Craft Retriever. The vehicle was engineered and constructed by R. G. LeTourneau, Inc., of Longview, Texas.

Like a pouched reptile, the Retriever enters the water, tucks the inoperable craft safely under its midriff and climbs ashore up grades as steep as 20 percent. Although designed to operate from the beach seaward to a water depth of six feet, tests at Fort Story, Virginia, indicate that it can operate successfully in eight foot depths.

THE Retriever is a four-wheeled diesel-electric, self-propelled vehicle, 75 feet long, 38 feet wide and



The Landing Craft Retriever is a statistical giant—75 feet long, 38 feet wide, 22 feet high, and weighing 101 tons.

22 feet high. It is capable of lifting any landing craft up to and including the 67-ton LCM–8. It will also lift other craft weighing up to 78 tons, measuring almost twice the length and three times the width of a moving van. Weight-wise, it will lift a vessel equal to six loaded moving vans.

THE vehicle may be sectionalized for movement by railroad flatcars, truck-trailers, or ship; the sections can be bolted together on the beach with standard equipment.

Fully assembled, the Retriever weighs 101 tons; fully loaded, 180 tons. Despite its weight and awkward appearance, the vehicle is maneuverable and easily controlled by one operator.

The Retriever's four drive wheels are equipped with 48x68–36 ply tubeless tires. These tires—ten feet high and four feet wide, among the largest ever manufactured—enable the Retriever to travel with ease over soft, sandy beaches.

Training Topics

WHAT'S NEW

IN TRAINING LITERATURE, AIDS AND EXTENSION COURSES

Keep your organization current with the latest training materials by referring to this section in each issue.

TRAINING LITERATURE

While the following new literature will be published shortly, units are cautioned *NOT* to requisition copies until receipt of automatic initial distribution or the items are listed in DA Pamphlet 310–3.

Field Artillery Rocket, 762-mm. Field manual 6–60—designed to assist commanders in developing the firing (launcher) sections of the FA Battery, 762-mm. Rocket into efficient teams—prescribes individual duties, section drill, methods for testing and loading, safety precautions, and methods for decontamination and destruction of equipment.

Procedures and Drills for the NIKE I System. FM 44–80 will be published to provide the information necessary to train operator personnel and enable the NIKE I unit to accomplish its mission. The manual will cover battalion organization, system components, preparation of missile and booster, preparatory steps and checks necessary to engage targets, and emplacement and march order.

4.2-Inch Mortar. Two items will be published on this subject:

a. *FM 6–( ), "4.2-Inch Mortar M30."* This new FM is designed to provide a guide for commanders in developing the sections of 4.2-inch mortar firing batteries into efficient teams.

b. *TC 6–( ), "Organization and Employment of the Field Artillery Battalion, 4.2-Inch Mortar."* This TC will include the general characteristics of the mortar, organization of the battalion and its tactical employment.

Tanks, 76-mm. Gun, M41 and M41A1. This new 17-series field manual (superseding appropriate portions of FM 17–12, 3 November 1950) will discuss and explain the M41 and M41A1 tanks and their components. The manual covers crew drill, service of the piece, conduct of fire, and the gunnery qualification course.

Signal Battalion (Operation). A new manual (FM 11–95)—first of a proposed new series of unit field manuals for Signal Corps units—will cover instructions in organization, training, and employment of the battalion.

Map Reading. This new manual (FM 21–26) consolidates and brings up to date information formerly contained in FM's 21–25 and 21–26. It provides under one cover material required for instructing both basic and advanced map students.

155-mm. Howitzer M44, Self Propelled. This new field manual in the 6-series prescribes individual duties and section drills, inspection and maintenance drills, tests and adjustments for sighting and fire control equipment, and references for decontamination and destruction of equipment.

Revisions. The following revised manuals have been approved for distribution: FM 5–31—Use and Installation of Booby Traps; FM 101–10—SOFM, Organization, Technical and Logistic Data; TM 6–241—Meteorological Tables for Artillery (Revision of TM 20–241); TM 9–1900—Ammunition, General.

TRAINING AIDS

Training Films recently approved for distribution:

Defense Against Radio Jamming (10 minutes) illustrates how the effects of jamming may be minimized and/or eliminated by proper application of anti-jamming techniques.

Field Training for ROTC (30 minutes). Orientation for ROTC cadets into camp life during summer field training. Emphasizes self-confidence of the leader, and his ability to think on his feet and to use his voice properly.

Techniques of Machine Gun Fire, Part VII, Position Defilade (25 minutes) includes types of defiladed firing positions, and the advantages and disadvantages,

methods and techniques of obtaining data, engagement of targets and fire adjustment.

Armies of the World: Soviet Army General Staff (39 minutes) deals with the composition and operation of the Soviet General Staff.

Reinforced Tank Battalion, Planning and Conduct of Delaying Action (22 minutes) explains how the medium tank battalion, properly reinforced by armored infantry and artillery units, is a powerful fighting team in the attack and a highly effective covering force for the withdrawal of a larger command.

Tank, 90-mm. Gun, M47, Crew Firing Duties. This two-part film explains the positions and firing duties of crewmen:

Part I—Preparing for Action (17 minutes)

Part II—Firing Duties (15 minutes)

Subarctic Winter Bivouacking (30 minutes) is designed to teach personnel what equipment is required and how it is used under combat conditions in a typical subarctic area in winter.

New Training Devices. Large cutaway 2 x 1-scale working models of four weapons (carbine, rifle, machinegun, and BAR) are available for issue and loan to all components of the Army through Training Aid Subcenters.

Graphic Training Aids have recently been approved on the following subjects:

Map reading Coordinate Card and Protractor (Revision)

Skysweeper (5 charts)

Automotive Subjects (9 charts)

Munitions (8 charts)

Visual Signals, Armor (28 charts).

ARMY EXTENSION COURSES

The following new subcourses have been approved for publication and administration in the Army Extension Course Program:

Offensive Tactics, Regiment I, Subcourse 50–7. The Infantry School. Reinforced infantry regiment in offensive operations to include planning and conduct of a penetration and an envelopment; attack on a narrow front; attack on a broad front; exploitation, pursuit.

M33 Acquisition Radar System, Subcourse 30–60. Ordnance School. Development of M33 basic components; complete block diagram and analysis of synchronizer, trigger generator, modulator, R. F. system, preamplifier, IF amplifier, acquisition resolver and sweep circuits, video and mark mixer, and use of test equipment.

Organization of the Chemical Corps, Subcourse 10–2. Chemical Corps School. Origin and development of the Chemical Corps; Office of the Chief Chemical Officer; introduction to the operating activities of the Chemical Corps as a whole, especially troop units.

Organization of the Chemical Corps, Subcourse 20–14. Chemical Corps School. Organization of the Chemical Corps and its relation to the Armed Forces as a whole, duties and responsibilities of the Chief Chemical Officer, and of the operating agencies.

Chemical Corps Maintenance and Supply in the Field, Subcourse 40–9. Chemical Corps School. Basic principles of Chemical Corps administration and operation necessary for effecting chemical support of the field forces in theaters of operation. Includes information on administrative organization and operations of chemical staff and troop units, supply and field service, and capabilities and functions of units in operating field installations.

Harbor Craft Deck Operations I, Subcourse 30–61. Transportation School. Covers responsibilities of individuals, customs and procedures, nomenclature, lifesaving equipment and drills, fire fighting and equipment, procedures in emergencies, marine safety, organizational maintenance, and first aid at sea.

The Officer Qualification Record, Subcourse 20–8. The Adjutant General's School. Basic procedures and techniques involved in the preparation and maintenance of officer and warrant officer qualification records.

Business Law—Part B (Agency and Negotiable Instruments), Subcourse 40–13. Finance School, U. S. Army. The creation of the agency relationship, legal rights and obligations among the agent, principal and third parties; provisions of the uniform negotiable instruments law, and the rights and obligations of parties to negotiable instruments.

Civilian Payroll Procedures, Subcourse 30–3. Finance School, U. S. Army. General provisions governing the pay of civilian personnel of the Department of the Army, and the procedures utilized by the Civilian Pay Branch of a Finance and Accounting Office in payment.

PARAGRAPHS
from
The Pentagon and the Field

A new Airborne Division—the 101st Airborne—will be activated at Fort Campbell, Kentucky. Personnel of the 187th Airborne Regimental Combat Team, now at Fort Bragg, North Carolina, and the 508th Airborne Regimental Combat Team, now in Japan, will be integrated into the new Division.

Designation of the 101st is now carried by the Training Division at Fort Jackson, South Carolina. Training center functions will remain at Fort Jackson when the division designation is moved to the new Active Army unit at Fort Campbell.

Activation of the 101st will bring back into the Army's combat structure one of the oldest and famed Airborne Divisions. Originally constituted in the Organized Reserve in 1921, the 101st was inactive until it was redesignated an Airborne Division in 1942, along with the 82d Division, to become one of the Army's first two Airborne Divisions. The 101st won fame in World War II for its defense of Bastogne in the Battle of the Bulge.

The Adjutant General is publishing a new series of officer and enlisted Military Occupational Specialties to classify jobs and personnel operating and maintaining command and observation airplanes and utility and cargo helicopters. The new MOSs are part of a continuing program to keep classification structures abreast of latest technological developments within the Army.

Dehydrated steaks and boneless pork chops—expected to remain nutritious and tasty after storage for six months in temperatures up to 100 degrees Fahrenheit—are under development by scientists and food technologists of industry and the Quartermaster Food and Container Institute for the Armed Forces at Chicago, Ill.

The steaks and boneless pork chops are dehydrated raw, and can be reconstituted in about half an hour. Four ounces rehydrate into the equivalent of one pound of fresh meat. The dehydrated meats are designed for troops in combat situations where kitchens are available but refrigeration is not.

AR 701–9100–1 makes the Transportation Corps responsible for the movement of bulk and packaged petroleum except by pipeline. Only those tank trucks engaged in the local distribution of petroleum will remain under Quartermaster control. The wholesale delivery of gasoline by trucks over military lines of communication will now be carried out by Transportation Corps truck units.

Evasion and escape training at The Infantry School has been expanded to include a 20-hour practical field exercise which will be presented to Basic Infantry Officer classes. The exercise is designed to instruct Infantry officers in the principles of evasion and escape as well as to prepare them to conduct similar exercises in Infantry units.

A new form for filling out personal histories, to be used in forwarding all home town material to the Army Home Town News Center, Kansas City, Missouri, may be requisitioned through normal publications supply channels. It is DA Form 1526, only one copy of which is required for each news release. Carbon copies will not be accepted. Details covering the Army Home Town News Center are contained in AR 360–83.

Secretary of the Army Wilber M. Brucker has approved implementation of a report by an ad hoc civilian committee on the administration and organization of the Army Chemical Corps calling for the appointment of an Assistant Chief Chemical Officer in charge of long-range planning and doctrine; and the establishment of three separate commands for Research and Development, Engineering, and Materiel.

Courses offered for enlistment under the High School Graduate Program are listed in Department of the Army Circular 601–13. Recruiting installation commanders, it is emphasized, will insure that recruiting personnel screen all applications carefully and that AR 601–230 is strictly complied with in processing applications and accomplishing enlistments under this program.

An award to be known as the Armor Leadership Award henceforth will be presented annually to the outstanding tank platoon of a designated armored division, through the Draper Combat Leadership Trust Fund. The Commanding General, Continental Army Command, will administer and perpetuate the trophy, which will be retained by the parent company until the next annual competition. The parent company will receive a plaque while each member of the winning platoon will receive individual trophies. Details are outlined in AR 672–73.

Samples of every type of soil in the world which might influence the effectiveness of mine detection devices are assembled in seven test lanes at the Corps of Engineers Research and Development Laboratories, Fort Belvoir, Virginia. The facility is believed to be the only one of its kind in the world.

Allocation of funds for the construction of U. S. Army Reserve Training Centers at Punxsutawney, Pennsylvania; Greenwood, South Carolina; Port Arthur, Texas; and Belleville, Illinois, brings to a total of 155 the number of such centers for which funds have been made available by the Congress.

Examen Calificacion de Fuerzas Armadas *(ECFA), a Spanish language test comparable to the Armed Forces Qualification Test (AFQT), was introduced in Puerto Rico in October 1953. Prior to that time only 29 percent of the Puerto Ricans examined were found to meet the minimum mental standards because an English language test was used. Today 58 percent of the Puerto Ricans examined with ECFA meet the standards.*

Since the last Infantry Instructor's Conference at the Infantry School, Fort Benning, Ga., an important change has been made in the concept pertaining to security forces in the mobile defense. The currently approved concept reads as follows:

"Security forces may include aviation and a mobile covering force furnished by corps or higher echelon. A mobile covering force may perform the mission of a general outpost. When the Infantry division is required to establish a general outpost, its capability for accomplishing all aspects of a mobile defense is compromised. In the absence of a general outpost, the strong points of the forward defensive area, in addition to their other missions, will perform the mission of a general outpost for the remainder of the division. Troops are not moved forward to accomplish the general outpost mission. In place of a combat outpost, the strong points establish detached observation posts."

Responsibilities of various Army agencies for the support of Headquarters, Continental Army Command (CONARC) are set forth in AR 10–6. This covers responsibilities in the development of doctrine, procedures, tactics, and techniques relating to joint and unilateral operations in amphibious, airborne, air movement, air defense, close air support, and Army transport aviation fields.

The Army Corps of Engineers will soon start a construction program in Pakistan under a Mutual Aid Agreement concluded between the United States and Pakistan. Airfields will be improved to accommodate high performance jet aircraft being furnished under the Mutual Defense Assistance Program. Port facilities will be improved to accommodate ships being furnished the Pakistani Navy; and Army facilities will be expanded for tanks and other equipment being furnished the Pakistani Army.

Personal interviews of military personnel have far reaching effects on selection, assignment, and utilization of Army manpower. DA Pamphlet 611–1 provides fundamental information and basic techniques for the guidance of individuals whose duties require them to interview personnel.

The Department of Defense Military Personnel Records Center, Missouri, has been established as a class III installation and placed in active station, under jurisdiction of The Adjutant General. At the same time the St. Louis Adjutant General Publications Center, Missouri, a class III installation, has been redesignated as a class II activity at the Center.

In the same directive, functions of several boards are promulgated. Functions under sections II and III AR 605–200 performed by the Army Personnel Board are transferred to the Army Board of Review for Demotions and Eliminations. Responsibility for review and recommendation in cases involving resignations of officers for the good of the service performed by the Army Personnel Board is transferred to the Army Council of Review Boards. Other functions of the Army Personnel Board are transferred to the Army Staff. All functions of the Army Decorations Board also are transferred to the Army Staff. Functions of the Army Screening Board under AR 604–10 are transferred to The Adjutant General.

Electronic data "bookkeeping" is on the way for the Army Signal Corps. As a first step in this direction, punch card data will be transmitted by radio and landline between Signal Corps supply depots, with machine records cards reproduced electronically to eliminate many clerical and administrative tasks. Sample tests made with electronic punch

PACKING THE HEAVY WALLOP of a 90-mm. gun in a hull of lightweight metals, the newly developed T–101 is a powerful, self-propelled anti-tank weapon designed for use in the assault phase of airborne operations. Its light weight enables it to be airdropped, and to traverse muddy, marshy, sandy or snow covered terrain. The T–101 carries a crew of three, at speeds up to 30 miles per hour.

card communications between Tobyhanna, Pennsylvania, and Orleans, France, indicated a savings of up to 25 days in administrative handling and transmission times.

The first Army-wide "Operation Army Service Club" contest will be judged in Washington, D.C. during the first two weeks in September. Besides providing an exchange of program ideas, the contest, sponsored by The Adjutant General, is expected to improve and expand service club publicity and programming at installations world-wide. Contest rules are set forth in Department of the Army Circular 28–23.

In computing of reserve retirement point credits, the Comptroller General of the United States has ruled that membership points may not be awarded for any period of active Federal service. As explained in Department of the Army Circular 135–14, the effect of this decision means that periods of active Federal service (including active duty for training) must be deducted in order to determine the number of membership points to be awarded for service in an active reserve component. The decision will not apply retroactively to any "retirement year" commencing prior to 15 April 1955, however.

The Comptroller General has ruled that commissioned officer appointments in the Army of the United States, without component, made under provisions of the Joint Resolution of 22 September 1941 (55 Stat. 728), terminated by operation of law on 30 June 1948 unless sooner vacated or unless continued by specific acts of Congress. The decision makes it necessary to correct military records of all personnel who are being credited with periods of Army of the United States status for pay and other purposes. Conditions under which appointments were continued beyond the cut-off date, or exceptions to those affected, are set forth in Department of Army Circular 35–53.

A pilot study is presently being conducted to determine the feasibility of assigning individual enlisted replacements to units in Europe prior to debarkation from CONUS. Rapid exchange of data between the Oversea Replacement Station, Fort Dix, New Jersey, and Headquarters, USAREUR, by electronic means is expected to eliminate the need for replacement depot processing in the oversea command. The study is being conducted under direction of the Commanding General, U. S. Army, Europe.

Department of the Army Pamphlet 20–213, *A History of Prisoner of War Utilization by the United States Army, 1776–1945*, was recently distributed to the field.

Official Notes

TRAINING AT CIVILIAN INSTITUTIONS. AR 350–200 governs training of military personnel at civilian educational, commercial and industrial institutions, and prescribes procedures and/or prerequisites therefor. Training is provided to augment that of service schools.

PERSONNEL ACTION. AR 600–47 prescribes use of DA Form 1049 (Personnel Action) which is designed for use in accomplishing a variety of routine personnel actions for which no other form is prescribed, or when no other type of communication is required.

PHYSICAL FITNESS. AR 600–160 sets forth policies designed to maintain physical fitness of officers and to detect abnormal physical conditions during early stages when remedial treatment can be prescribed. It prescribes that for officers not actually participating in drills or other active outdoor instruction with troops, duties will be so arranged that each will be allowed a half-day a week for physical exercise.

DISCHARGE AND RELEASE. AR 635–200 provides for discharge of enlisted personnel upon expiration of term of enlistment. It also sets forth general provisions governing release from active duty of enlisted and inducted persons prior to expiration of terms of service as governed by other regulations covering various conditions.

TRAILER ALLOWANCE. AR 35–3055 provides for reimbursing a member of the Army for cost of transporting a house trailer or mobile dwelling at personal expense in connection with a permanent change of station when such unit is used as a residence at destination by the member and dependents, or by dependents alone. Transportation of a house trailer outside the United States, however, continues to be at the personal expense of the member.

TRAINEE PROGRAM SUPPLY POLICIES. AR 135–460 prescribes the supply policies and procedures for support of personnel participating in the six months trainee program authorized by the Reserve Forces Act of 1955. Provisions are applicable to support of trainees of the Army Reserve and of enlisted men of the National Guard authorized to participate in this program; they also apply to the eight-week National Guard training program.

UNSATISFACTORY EQUIPMENT REPORT. AR 700–38 establishes uniform procedures for reporting deficiencies in design and manufacture of equipment and materiel except ammunition and drugs and biologicals, to permit prompt correction and insure prompt change of technical instructions, or prevent further issue of defective items.

AGGRESSOR. AR 350–177 redefines Aggressor terms, restates the mission and scope of employment of the Aggressor Center (formerly Aggressor Cadre) and clarifies the sphere of responsibility for Aggressor, the maneuver enemy.

ARMY SPORTS PROGRAM. AR 28–52 sets forth details for administration of the Army Sports Program.

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Waves Made to Order For Engineer Tests

IN ITS NEVER-ending battle to protect coastal areas from erosion damage, the Army has developed a huge wave testing machine designed to permit large scale tests of wave forces and effects. The new machine, developed by the Beach Erosion Board of the Corps of Engineers, recently was demonstrated at the Board's headquarters in Washington.

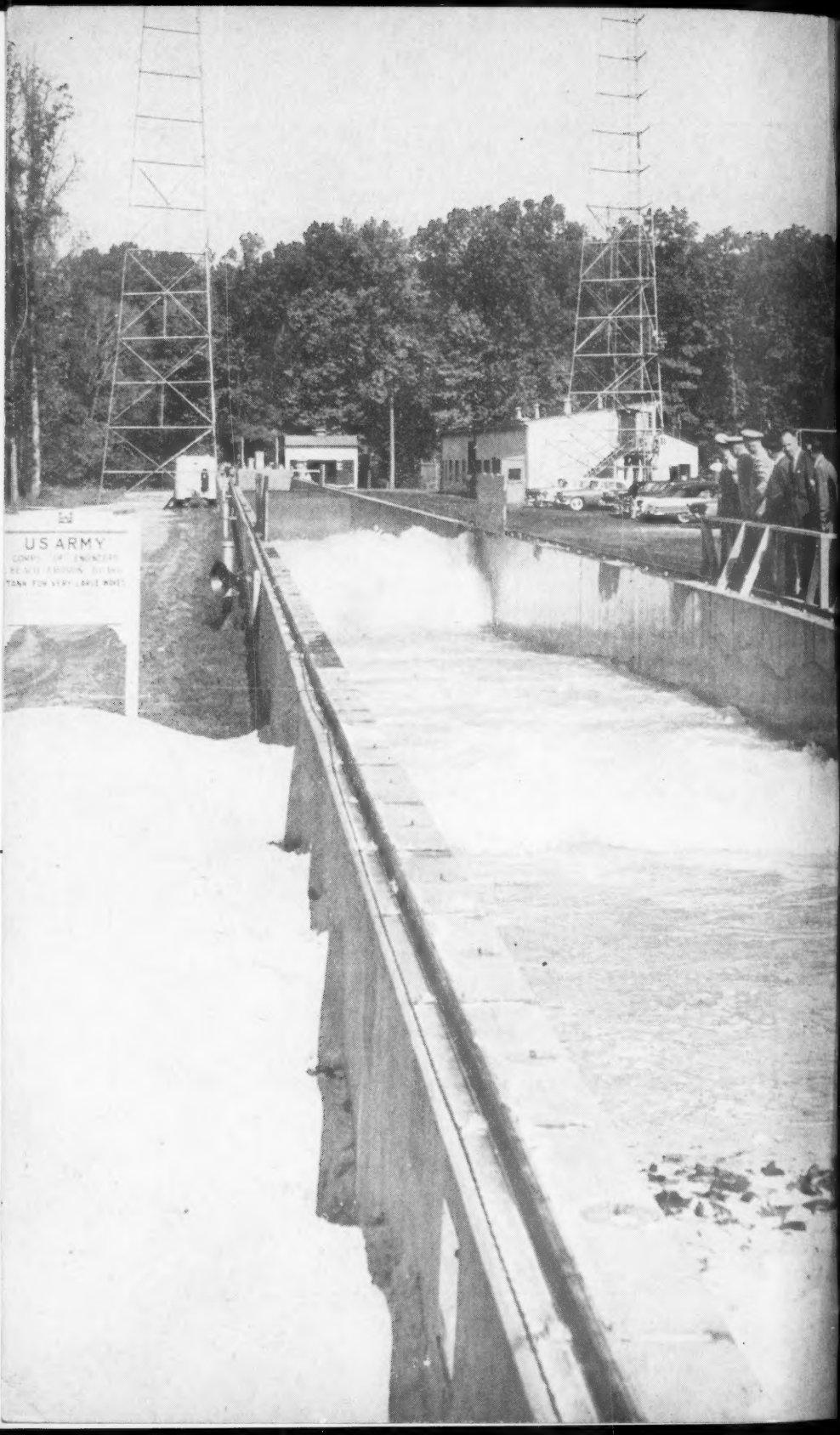
Waves are created in a concrete tank 635 feet long, 15 feet wide and 20 feet deep. The generating mechanism consists of a vertical bulkhead 20 feet high which is pushed back and forth by two large crank arms, driven through a gear train by a 510 horsepower electric motor. This creates waves six feet high midway along the tank, with a breaking height of seven feet at the end of the tank.

Such waves are believed to be the largest ever generated in a laboratory wave channel, the previous peak being about two feet. Action on various types of beach material and building types can be carefully studied under laboratory conditions to provide large scale model data on wave action up to hurricane proportions.

This is particularly pertinent in view of the Corps of Engineers newest civil works assignment to study and report to Congress on methods of alleviating hurricane damage. Basic data applied to coastal and inland engineering problems are expected to result in substantial savings in construction costs of various types of structures subject to wave forces.

The $700,000 facility is used in studies conducted by the Beach Erosion Board. The Board, organized in 1930 under the Chief of Engineers, conducts general research in coastal phenomena and studies specific problems in cooperation with civil authorities. It also provides specialized technical assistance to the military services as required.

(For view of the Wave Machine in action, see back cover.)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